Symantec Enterprise Security Manager™ Best Practice Policy Manual

ISO 17799 standard-based best practice policies for AIX operating systems

Best Practice Policy Manual for AIX

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Symantec ESM Best Practice Policy Manual for AIX

This manual documents the ISO 17799 standard-based best practice policies for Symantec Enterprise Security Manager™ (ESM) agents on AIX operating systems. The documented policy is provided for ESM 5.1 and ESM 5.5 managers and agents that are running Security Update 9 or later module releases.

This chapter includes the following topics:

- Introducing best practice policies
- Installing best practice policies
- AIX base policy
- AIX high-level policy
- Known restrictions

Introducing best practice policies

ESM best practice policies are configured by members of the Symantec Security Response team to protect specific applications and/or operating system platforms from security vulnerabilities that could compromise the confidentiality, integrity, and/or availability of data that is stored and transmitted on your computer network.

Best practice policies are designed to enforce "common best practices" as described in the ISO/IEC 17799 international standard, "Information technology - Code of practice for information security management," and defined through research by trusted security experts and clearing houses.

Note: ESM best practice policies are based on sections of the ISO 17799 standard that address logical access controls and other security issues pertaining to electronic information systems. Symantec recommends that you review the ISO 17799 standard in its entirety to identify other issues, such as physical access controls and personnel training, that need to be addressed in your organization's information security policy.

How best practice policies differ from ESM default policies

The Phase 1, 2, and 3 default policies that are installed with ESM core product and Security Update releases are intended to be modified by users to enforce relaxed, cautious, and strict security policies in enterprises that include mixes of clients, servers, and applications that cannot be anticipated by ESM developers.

Best practice policies are preconfigured by members of the Symantec Security Response team to harden specific operating system platforms and protect known combinations of applications and OS platforms. These policies use preconfigured values, name lists, templates, and word files that directly apply to the targeted applications and platforms.

Best practice policies use the modules and templates from ESM Security Update releases to check OS patches, password settings, and other vulnerabilities on the targeted operating system. Best practice policies may also introduce new, application-specific modules and templates to check conditions that are specifically related to the targeted application and OS platform.

ESM best practice policies represent the collective wisdom of security experts, and they should not be modified by ESM users. In ESM 5.5, they are installed as read-only policies that cannot be edited by ESM users.

Warning: Do not attempt to modify an ESM best practice policy. Instead, copy and rename the policy, then edit the new version. This preserves the original best practice policy and also protects your customized policy from being overwritten by policy updates to the best practice policy.

How base policies differ from high-level policies

ESM best practice policies are configured as base policies, as high-level policies, or as sets that include both base and high-level policies.

Base policies are configured using the 80-20 rule of security. The 80-20 rule states that 80 percent of a successful compromise comes from 20 percent of a system's vulnerabilities or misconfiguration.

To detect critical system vulnerabilities, base policies are configured to:

- Identify unneeded services
- Identify missing OS patches
- Enforce password strength rules
- Check for application or platform-specific vulnerabilities that are deemed most critical by security experts

High-level policies incorporate checks for additional best practices that are prescribed by the ISO 17799 standard and recommended for specific application and OS platform combinations by trusted information security experts.

Industry research sources

Many of the security vulnerabilities that are addressed by the ISO 17799 standard and ESM best practice policies have been researched by industry security experts. Best practice recommendations that result from this research are posted to numerous Web sites and published as advisories by a variety of organizations that act as security information clearing houses.

Research resources for ESM best practice policies include, but are not limited to, the following:

- Symantec Security Response team
- CERT Coordination Center
- SANS Institute
- Computer Incident Advisory Center (CIAC)
- Center for Internet Security (CIS)
- National Infrastructure Protection Center (NIPC)
- National Security Agency (NSA)
- Information Systems Audit and Control Association (ISACA)
- Application and operating system vendors

Note: ESM best practice policies were researched using information that was released into the public domain by the organizations listed above. Recognition of these organizations does not indicate official endorsement of ESM best practice policies by any of these organizations.

Installing best practice policies

ESM best practice policies should be installed on the ESM managers that will run the policies on ESM agents with the applications and/or operating system platforms that are targeted by the policies.

Installation prerequisites

Before you run the executable program that installs the best practice policy that is documented in this manual, you need to complete the following prerequisites:

- Upgrade all ESM manager and agent systems that will use the best practice policies to ESM version 5.1 or later.
- Upgrade the UNIX modules on all ESM manager and agent systems that will use the best practice policies to Security Update 9 or later.
- Download the **BestPractice_AIX_4x_UNIX_ISO** executable file on the Symantec Security Response Web site at:

  http://securityresponse.symantec.com
- Identify the ESM account name, the ESM account password, and the communication port that you will need to connect to each ESM manager you intend to install.

Installation steps

1. Run the **BestPractice_AIX_4x_UNIX_ISO** executable file from a Windows NT, Windows 2000, or Windows XP system that has network access to the ESM manager you want to install.
2. Click **Next** to close the InstallShield Welcome dialog box.
3. Click **Yes** to accept the Symantec Corporation Software License Agreement.

Warning: If the install program does not find the required Java™ 2 Runtime Environment on your system, the program returns an error and aborts the installation. Download and install the Java 2 Runtime Environment, then rerun the install program.

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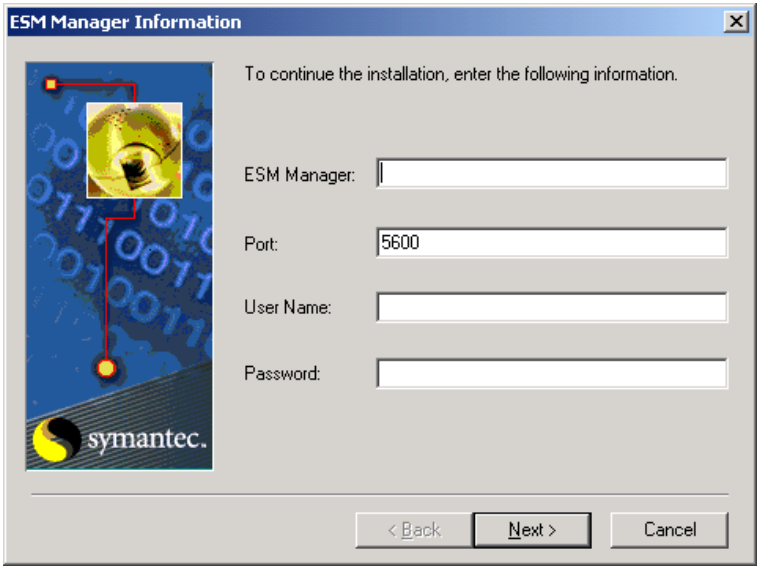
4. Click **Yes** to continue installation of the best practice policies.

5 Enter requested ESM manager information, then click **Next**.



Note: The install program returns an error message and aborts the installation when it does not find an agent with the required operating system platform nor all of the modules that are executed by the policy on the specified manager. Register an agent with the required operating system and install the latest security update, then rerun the install program.

6 Click **Finish** to exit the install program after a successful installation.

AIX base policy

The AIX base policy runs the following ESM security checks on AIX operating system to enforce ISO 17799 standard-based best practices. See the *ESM Security Update User's Guide for UNIX Modules* for more information about the security checks and templates that are enabled in the documented policy.

OS Patches checks and templates

Make sure that all patches that are defined in the AIX patch.pai template file are installed on applicable versions of AIX operating systems. See ISO 17799 section 10.4.1.

Note: Make sure that you are using the patch.pai template file that was installed by ESM Security Update 9 or later. If you have edited this template, you should restore it to its previous state.

Password Strength checks

- **Password = username**, **Password = any username**, **Password Within GECOS Field**, and **Password = wordlist word**. Passwords that are used to log in to your AIX systems should not match any user name on your system, any name in GECOS fields in the /etc/passwd file, or any commonly-used dictionary word. The AIX base policy checks all passwords against both upper and lowercase forms of user names and word list words and reports user accounts that require password changes. See ISO 17799 section 9.3.1(d)(2).
- **Login requires password** and **Accounts without passwords**. Require passwords to log in to all user accounts. See ISO 17799 sections 9.3.1 and 9.5.3.
- **Check password length restrictions**. Require passwords of at least six characters. See ISO 17799 section 9.3.1(d).

Startup Files checks and templates

- **Services**. The AIX base policy checks your AIX operating systems for services that are defined in the aix4xb.sai Services template file. Install any Mandatory services that are reported as missing and remove any installed services that are reported as Forbidden. See ISO 17799 sections 8.3, 9.4.1, and 9.4.9.
- **Report Services not in template**. Review all system-owned processes that are reported by this check, but not listed in the Services template. Remove all unnecessary services from ESM agents. See ISO 17799 sections 8.3, 9.4.1, and 9.4.9.

AIX high-level policy

The AIX high-level policy runs all of the security checks that are included in the base policy as well as the following checks to ensure compliance with ISO 17799 standard-based best practices. See the *ESM Security Update User's Guide for UNIX Modules* for more information about the security checks and templates that are enabled in the documented policy.

Account Integrity checks

- **Illegal login shells** and **Nonexistent login shells.** Ensure that all user accounts have login shells that are listed in the /etc/shells file. See ISO 17799 section 9.6.1.(a) and (b).
- **Setuid login shells** and **Setgid login shells.** Remove setuid and setgid privileges from login shells. Executable files that run as the file owner or group owner may provide unauthorized access to other files on your systems. See ISO 17799 sections 9.5.3, 9.5.5 (c), and 9.6.1 (c).
- **Home directory permissions.** Enforce secure home directory permissions of at least 750. See ISO 17799 section 9.1.1.2 (b).
- **Changed accounts** and **Changed groups.** Review all user accounts and groups that have changed since the user or group snapshot file was last updated. If reported accounts were not changed by the system administrator, they may represent a security breach. See ISO 17799 section 9.2.4 (c).

Note: The Account Integrity module creates and maintains an agent snapshot file that stores information about user accounts on the system. Run the module one time to create the snapshot. Then periodically rerun the policies to detect service changes.

- **Duplicate IDs.** Remove or disable user IDs (UIDs) and group IDs (GIDs) that are shared by two or more users or groups. See ISO 17799 sections 9.2.1 (a) and 9.5.3.
- **Privileged users and groups.** Remove or disable users and groups that have a user ID or group ID that allows super-user privileges or privileged access to system files. See ISO 17799 section 9.2.2 (e).
- **Accounts that must be disabled.** Disable unauthorized user accounts.
- **Password in /etc/passwd.** Remove or disable users with passwords that are contained in the /etc/passwd file when the system is using, or has access to, shadow files or enhanced security files. See ISO 17799 section 9.2.3.

File Attributes checks

- **Check file user ownership, Check file group ownership,** and **Check file permissions.** Enforce the file user ownership, file group ownership, and file permission values that are specified in the aix4xh.aix template file. See ISO 17799 sections 9.5.5 (a, c, g) and 9.6.1 (c).

  Note: The File Attributes module creates and maintains an agent snapshot file that stores information about files on the system. Run the module one time to create the snapshot. Then periodically rerun the policies to detect service changes.

- **Check file creation time, Check file modification time,** and **Check file size.** Files that are specified in the template file should have the same file creation times, modification times, and file sizes that are stored in the agent's snapshot file. See ISO 17799 section 10.4.1 (a).
- **Perform checksum check (CRC/MD5).** This check detects changes to files by comparing file checksums with the checksums in the most recent snapshot files.

  Comparing file checksums is superior to comparing creation time, modification time, and file size because it is significantly more difficult for someone to change a checksum without detection. See ISO 17799 section 10.4.1 (a).

File Find checks

- **Setuid files, Setgid files, New setuid files,** and **New setgid files.** Remove the setuid and setgid attribute from unauthorized files.

  Anyone running a setuid or setgid file is temporarily assigned the user ID of the file. While many system files depend on this attribute for proper operation, security problems can result if setuid or setgid is assigned to programs that allow reading and writing of files or escapes to shell. See ISO 17799 section 9.2.2.

- **World writable files.** Reassign permissions to files that are writable by everyone. World writable files are security risks because there are no controls over who can modify or delete these files. See ISO 17799 section 9.1.1.2 (b).

- **Uneven file permissions.** Reassign permissions on files with other access that is greater than group access or user access. Also, reassign permissions on files with group access that is greater that user access. A file with uneven permissions is inconsistent and does not make sense from a security perspective. See ISO 17799 section 9.1.1.2 (b).

- **Unowned directories/files.** Remove or change the owner of directories or files with ownerships (UID or GID) that cannot be associated with user or group names on the system being checked. These files are not accounted for and do not make sense from a security perspective. See ISO 17799 section 9.2.1 (h).

File Watch checks

- **Enable ownership checks.** Examine files and directories in the /bin, /lib, /sbin, /usr/bin, /usr/lib, and /usr/sbin directories for ownership changes. Run the module first to create the snapshot file. Then examine the results of ongoing checks to make sure changes were authorized. See ISO 17799 sections 9.5.5.9 (a, c, g) and 9.6.1 (c).
- **Enable permissions checks.** Examine files and directories in the /bin, /lib, /sbin, /usr/bin, /usr/lib, and /usr/sbin directories for recently modified or expanded permissions. Run the module first to create the snapshot file. Then examine the results of ongoing checks to make sure changes were authorized. See ISO 17799 section sections 9.5.5.9 (a, c, g) and 9.6.1 (c).
- **Enable signature checks (against snapshot).** Calculate MD5 and CRC signatures on files and directories in the /bin, /lib, /sbin, /usr/bin, /usr/lib, and /usr/sbin directories and compare the results with signatures that are stored in the agent's snapshot file. Run the module first to create the snapshot file. Then examine the results of ongoing checks to make sure changes were authorized. See ISO 17799 section 10.4.1 (a).
- **Enable new file checks.** Examine recently created files and directories in the /bin, /lib, /sbin, /usr/bin, /usr/lib, and /usr/sbin directories. See ISO 17799 section 10.4.1 (a).
- **Enable removed file checks.** Examine recently removed files and directories in the /bin, /lib, /sbin, /usr/bin, /usr/lib, and /usr/sbin directories. See ISO 17799 section 10.4.1 (a).

Login Parameters checks

- **Inactive accounts.** Remove or disable accounts that have never been logged into and accounts that have not been logged into during the previous 30 days. See ISO 17799 section 9.2.1 (h).
- **Login failures.** Examine user accounts with an unusual number of failed login attempts during the previous 15 days. See ISO 17799 sections 9.5 (b) and 9.7.1 (d).
- **Remote root logins.** Prevent root access through rlogin and telnet. The root account should be accessed only through the system console. See ISO 17799 section 9.5.1.

Network Integrity checks

- **NFS exported dirs with no access lists.** Use access lists with NFS exported directories to limit access to intended users. Without access lists, exported directories allow world access. See ISO 17799 section sections 9.4.1, 9.4.3, 9.6.1, and 9.1.1.2 (b).
- **NFS exported dirs with anonymous access.** Prevent anonymous users from accessing NFS exported directories. See ISO 17799 sections 9.4.1 and 9.4.3.

Password Strength checks

- **System/user max password age.** Require password changes at least every 60 days. Frequent password changes increase the overall security of the system. You should require users to change their passwords periodically (at least one time each 60 days). See ISO 17799 section 9.3.1 (e).

Startup Files checks

- **Report duplicate services.** Examine all system-owned services, processes, or commands that are duplicated on the system (i.e., found in the process table more than once) and decide if any should be removed or disabled. This includes system-owned commands that are running multiple times in the process table. See ISO 17799 sections 8.3, 9.4.1, and 9.4.9.
- **Changed services** and **New services.** First run the module to create a snapshot. Then examine services that have been added or with configurations that have been changed since the last time the ESM service snapshot was updated. See HIPAA sections 8.3, 9.4.1, and 9.4.9.

User Files checks

- **File ownership.** Reassign permissions to user files and directories that have different UIDs or GIDs than the IDs listed in the agent's password file. Incorrect file ownership can allow unauthorized access to files or prevent authorized users from accessing the files.
- **World writable files.** Reassign permissions to user files and directories that are world writable. Files that are writable by everyone represent a security risk because there are no controls to restrict who can modify or delete these files. See ISO 17799 section 9.1.1.2 (b).
- **Set UID or GID.** Remove the set user ID (setuid) or the set group ID (setgid) from unauthorized files. Files that set the UID or GID of users executing the files to the UID or GID of the file owner, or to other users, may allow unauthorized access to other files. See ISO 17799 section 9.2.2.
- **Check startup file contents.** Examine startup files for security risks. For users with .rhosts files, the check produces a list of users and systems that are not required to enter a password. For users with .netrc files, the check produces a list of entries containing passwords. See ISO 17799 sections 9.4.3, 9.3.1 (g), and 9.2.3.
- **Check startup file protection.** Ensure proper ownerships and permissions for the .cshrc, .exrc, .forward, .login, .mailrc, .netrc, .newsrc, .nodes, .profile, .rhosts, and .Xdefaults files.
- **Suspicious file names.** Examine executable files with "suspicious" names in the user's home directory tree. A suspicious name is one that is the same as a user name or the name of a system command listed in the man pages. An executable with a suspicious name can be executed unknowingly by another user. This can occur when a common user or system command is input and the path is not set up properly. See ISO 17799 section 8.3.
- **Device files.** Examine block-special and character-special (device) files in the user's home directory tree. See ISO 17799 section 9.2.2.
- **Mount points.** Examine mount points within the user's home directory tree. It is not standard practice to mount devices in user areas. This can represent unauthorized access to data on the device in question. See ISO 17799 section 9.2.2.

Known restrictions

Registration of new agents to ESM 5.1 managers

When you register an ESM 5.1 agent with an operating system that was not registered to your ESM 5.1 manager before you installed a best practice policy, the new agent's operating system inaccurately displays in the policy's expanded module lists in the ESM enterprise tree.

For example, if you install the AIX base policy on an ESM 5.1 manager where only UNIX agents are registered, then register a Windows 2000 agent to that manager, the WIN2000 agent listing displays in the module lists. This is misleading, because this policy does not run on Windows 2000 agents. Reinstall the policy to correct the module listings.

These are cosmetic errors that are fixed in the ESM 5.5 console release. If you are using the ESM 5.1 console, remember that each ESM best practice policy is intended to run only on ESM agents that are running the applications and/or operating system versions that are targeted by the policy.

Service and support solutions

You can reach Customer Service and Technical Support for Symantec Enterprise Security Manager and add-on products on the Internet or by telephone.

This chapter includes the following topics:

- Before contacting technical support
- Service and support Web site
- Service and support offices

Before contacting technical support

Before contacting technical support

1. Use online Help to look up the information you need.
2. Read the relevant portions of this guide and your *Symantec Enterprise Security Manager User Manual*. This guide is available as a PDF file on the product CD.
3. Consult the Symantec ESM Release Notes for the version that you are using at http://securityresponse.symantec.com.
4. Gather the following information:

Category	Information	Source
Console	Machine type	Windows: System properties
	OS level	System properties

Category	Information	Source
	Version	**Help** > **About**
	Date	**Help** > **About**
Manager	Machine type	UNIX: **uname -a** NT/2000: System properties
	OS level	UNIX: **uname -a** NT/2000: System properties NetWare: Version command
	Version and date	Manager properties
Agent	Machine type	UNIX: **uname -a** NT/2000: System properties NetWare: Version command
	OS level	UNIX: **uname -a** NT/2000: System properties NetWare: Version command
	Version and date	Agent properties
Network	Protocol vendor and version	
Problem	Symptoms	
	Steps to reproduce	
	Error message text (all characters)	
	System log file text	

Service and support Web site

The award-winning Symantec Service and Support Web site provides a wide variety of methods to help you solve your enterprise technical issues. Point your browser at http://www.symantec.com/techsupp/.

Knowledge Base

Search the Symantec Enterprise Security Manager Knowledge Base to find answers to common problems and questions. The Symantec Knowledge Base contains 90 percent of all known issues with accompanying solutions.

Often this is the fastest way to get the information that you are looking for.

If you do not use Microsoft Internet Explorer, you may have to go first to http://www.msn.com, then to http://www.symantec.com/techsupp/

LiveUpdate for databases, firewalls, and Web servers

Systems that are installed with manager and agent software can also be upgraded with SU9 and later Security Update releases through Symantec's LiveUpdate technology.

Download updated modules for Symantec ESM for databases, firewalls, and Web servers. Symantec ESM 5.5 and a subscription to LiveUpdate are required. See the *Symantec Enterprise Security Manager 5.5 User Manual*.

Releases and updates

Download new products and Security Updates using LiveUpdate or from the Symantec Security Response Web site at http://securityresponse.symantec.com.

Manuals and documentation

Download current user's guides, installation guides, and other documentation in PDF format. Most PDF documents can be found on the product CD.

Web support

Log questions or problems for Technical Support. You can also create a case, add notes to a case, check the status of a case, and close a case.

Email support

Email pre-sales or non-technical questions to Customer Service for service options.

Symantec ESM news bulletins

Subscribe to this product specific mailing list for:

- Up-to-date notification of product upgrades
- Latest offerings from Technical Support
- Product tips and tricks

Service and support offices

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